Module Template for New and Revised Modules

<table>
<thead>
<tr>
<th>Module Code</th>
<th>ME7B18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module Name</td>
<td>Design and Innovation</td>
</tr>
<tr>
<td>ECTS Weighting²</td>
<td>10 ECTS</td>
</tr>
<tr>
<td>Semester taught</td>
<td>Semester 2</td>
</tr>
<tr>
<td>Module Coordinator/s</td>
<td>Prof. Michael Monaghan/Prof. Conor Buckley</td>
</tr>
</tbody>
</table>

Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline

On successful completion of this module, students should be able to:

LO1. Create and interpret a brief and to make competent judgements and decisions at the design level.
LO2. Perceive the nature of problems in depth, and to pursue innovative and creative solutions to design problems.
LO3. Communicate design and research concepts through multiple mediums both, visually and orally to multi-disciplinary teams.
LO4. Understand the relevance of individual research in society and the potential impact on individuals, groups and society.
LO5. Possess skills ranging from concept through realization to produce high quality functional product prototypes using 3D printing technologies.
LO6. Communicate effectively with fellow peers and experts from unrelated fields in order to grasp a societal need and address it when part of a multidisciplinary team.

Graduate Attributes: levels of attainment

To act responsibly - Attained
To think independently - Attained
To develop continuously - Attained
To communicate effectively - Attained

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¹ An Introduction to Module Design from AISHE provides a great deal of information on designing and re-designing modules.
² TEP Glossary
**Module Content**

This module introduces students to tools and topics within the clinical engineering environment. This module will provide students with an introduction to working within multidisciplinary project teams and provide the opportunity to apply learned knowledge to real world problems within group project work to develop functional prototypes using rapid prototyping technology. The content is split across three initiatives:

- Introduction to industrial design run by National College of Art & Design (NCAD)
- Synergy Initiative in coordination with the School of Computer Science and Statistics and School of Natural Science to address global challenges in humanitarian aid using appropriate technology design, development and delivery.
- Group project involving the development of functional device prototypes using rapid prototyping technology; website design, engagement with healthcare and non-profit organisations, and demonstration of projects through public outreach at local science fairs, school-demonstrations, media outlets and social platforms.

**Teaching and Learning Methods**

The module is taught using a combination of seminars, lectures and project related work.
### Assessment Details

Please include the following:

- Assessment Component
- Assessment description
- Learning Outcome(s) addressed
- % of total
- Assessment due date

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>Assessment Description</th>
<th>LO Addressed</th>
<th>% of total</th>
<th>Week due</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCAD Project</td>
<td>This assessment is based on participation, progress and the calibre of the project developed in NCAD</td>
<td>1,2,3,4,5,6</td>
<td>40</td>
<td>Wk 28</td>
</tr>
<tr>
<td>Synergy Initiative</td>
<td>This is based on the class participation, 3 peer assessment, interim presentation, project final presentation and delivery</td>
<td>1,2,3,4,5,6</td>
<td>25</td>
<td>Continuous</td>
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<tr>
<td>Med3DP</td>
<td>Med3DP – Final presentation</td>
<td>1,2,3,4,5,6</td>
<td>35</td>
<td>Wk 33</td>
</tr>
</tbody>
</table>

### Reassessment Requirements

Not applicable

### Contact Hours and Indicative Student Workload

- **Contact hours:** 65 – includes Synergy workshops, hackathons, Full week in NCAD and St. James’ Hospital, Med3DP innovation clinics.
- **Independent Study (preparation for course and review of materials):** 100
- **Independent Study (preparation for assessment, incl. completion of assessment):** 35

### Recommended Reading List

- Module Pre-requisite
- Module Co-requisite
- Module Website: [www.med3dp.com](http://www.med3dp.com)

### Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.

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3. [TEP Guidelines on Workload and Assessment](#)
<table>
<thead>
<tr>
<th><strong>Module Approval Date</strong></th>
<th>30/07/19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approved by</strong></td>
<td>Michael Monaghan / Conor Buckley</td>
</tr>
<tr>
<td><strong>Academic Start Year</strong></td>
<td>2019</td>
</tr>
<tr>
<td><strong>Academic Year of Date</strong></td>
<td>2019</td>
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